Chapter 7

Defense Satellite Communications System Ground Mobile Force Control Link Section

7-1. General

The Defense Satellite Communications System Ground Mobile Force Control Link Section (DGCL) provides an interface between the strategic and tactical SATCOM network controllers. Since the DGCL will operate as the largest special user subnet within the DSCS Operational Control System (DOCS), the DGCL requires its own subnet controller at selected DOCS sites. Figure 7-1 shows a diagram of the GMF satellite communications network.

7-2. Structure

DGCL principal components are identical to the SCCC (AN/MSQ-114). They are categorized as orderwide subsystem, SAMS, and teletype subsystem. The DGCL uses the host terminal RF equipment for transmission and monitoring of the GMFSC terminals.

a. Mission. The DGCL personnel—

(1) Coordinate with DSCS and GMFSC controllers on matters affecting GMFSC deployments. Coordination is accomplished via the DGCL orderwide.

(2) Exercise control of the GMFSC terminals in the DSCS operations FGFSC gateway link.

(3) Can provide contingency control of the GMFSC network in the absence of the SCCC (AN/MSQ-114).

b. Assignment.

(1) The DGCLs are located in fixed station earth terminals. The present locations are:

(a) Camp Roberts, California.
(b) Fort Buckner, Okinawa.
(c) Fort Detrick, Maryland.
(d) Landstuhl, West Germany.
(e) Fort Gordon, Georgia (training).

(2) There is presently one DGCL allocated per theater of operations.

(3) Future DGCLs will be located at:

(a) Sunnyvale, California
(b) Washington, DC, area.
(c) Northwest, Virginia.
(d) Clark Air Base, Philippines.
(e) Wahiawaha, Hawaii.
(f) Fort Monmouth, New Jersey (support system).

c. Organization. There are five full-time personnel assigned to the DGCL at the DSCS operation centers located at Camp Roberts, Fort Detrick, and Landstuhl. There are also five full-time personnel assigned to the DGCL located at the Fort Buckner earth terminal.

7-3. Command and control

The DGCL provides orderwire communications with GMFSC terminals and measurement of GMFSC satellite use. The DGCL operates in the SHF military satellite communications band. Unlike the SCCC (AN/MSQ-114), the DGCL is not self-sufficient. The DGCL uses the antenna, receive RF amplification, and transmit RF amplification of a DSCS host satellite terminal. The terminal connection does not reduce the normal communications capacity of the host terminal. The DGCL will be installed in buildings with other equipment. Normally, the only communications available to deployed GMFSC terminals is via satellite orderwire.

a. Section personnel. At this time, five personnel are authorized for the DGCLs. If a large GMFSC mission is required, the DGCL must be augmented by additional personnel. The complexity and size of the DGCL require a crew of two persons per shift. Maintenance requirements for the SAMS and other special DGCL control equipment are unique. The DGCL operators are trained to provide intermediate (GS) maintenance.

b. Internal communications. The internal communications for the DGCL consists of class A phone access, automatic voice network (AUTOVON), automatic digital network (AUTODIN), and automatic secure voice communications (AUTOSEVOCOM) and orderwire subsystem.

7-4. Employment

a. The DSCS or DGCL provides the required control for the following SHF satellite terminals:

(1) *Production Model*

(a) AN/TSC-85A.
(b) AN/TSC-93A.
(c) AN/TSC-94A.
(d) AN/TSC-100A.

(2) Development model.

(a) AN/TSC-85.

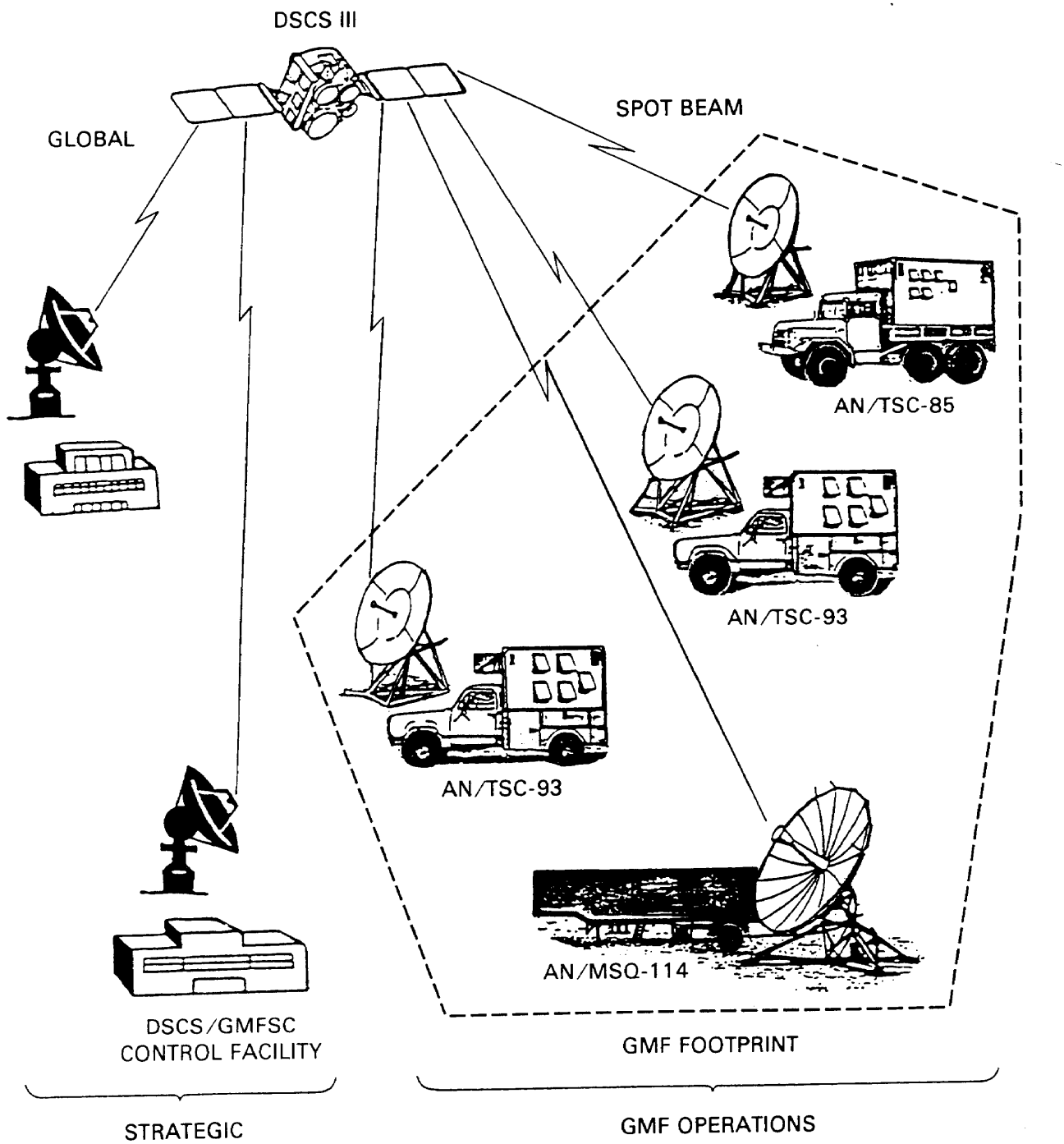

Figure 7–1. Ground Mobile Forces Satellite Communications Network

(b) AN/TSC-93.
(c) AN/TSC-94.
(d) AN/TSC-100.

b. Complexity of employment scenarios depends on the timeframe and tactical situation. The SCCC (AN/MSQ-114) provides SCCC control for GMFSC links.

c. The operation of DGCL equipment is dependent on equipment within the DSCS host facility. The DGCL is under the operational control of the satellite area GMFSC manager.

7-5. Operations

The DGCL has four mission capabilities (DSCS gateway control, GMFSC network control, large GMF terminal deployment, and small GMF terminal deployment) which are shown in figure 7-2.

a. Capabilities. The DSCS or DGCL cannot do all four missions simultaneously. Normally the DGCL will have two full-time functions:

(1) Control orderwire circuits to SCCC (AN/MSQ-114) and SATCOM NCT deployed in the covered area.

(2) Exercise control of interoperable (gateway) links. Contingency control for GMFSC networks and control of small GMFSC operations for extended periods require personnel augmentation.

b. Limitations. The DGCL depends on host-station DSCS equipment. It is not transportable. All support (for example, personnel, medical, financial, and so forth) comes through the host-station commander.

c. Defense. The DGCL personnel augment the host-station personnel for site defense. Within a theater of operations the DGCL sites are lucrative targets for the enemy. Site defense consists of physical security, protection against electromagnetic pulse (EMP), and operations in an NBC environment.

d. Mobility. The DGCL is neither mobile nor transportable. The three subsystems can be removed from a DSCS earth terminal and reinstalled at another earth terminal. Disassembly or installation would take 1 day if another site is prepared in advance.

7-6. Deployment

The DGCL accomplishes the missions in either a forward-deployed mode or nonforward-deployed mode.

a. Forward-deployed support. The DGCLs located within a satellite area of operations provide support to the TCC(A) commander. As such, the personnel are under the command of the TCC(A) commander, but under the operational control of the GMFSC manager.

b. Non-forward-deployed support. The DGCL in a satellite area may provide support to another satellite area. For example, the DGCL facility located at Fort Detrick, Maryland, frequently controls the European theater via the DSCS II Atlantic satellite.

c. *Contingency deployment.* The DGCL can control DSCS II satellite contingency operations from outside the theater. This control reduces aircraft and personnel requirements. It also enhances OPSEC considerations. The DSCS or DGCL is also used to provide contingency control when the SCCC (AN/MSQ-114) is being deployed.

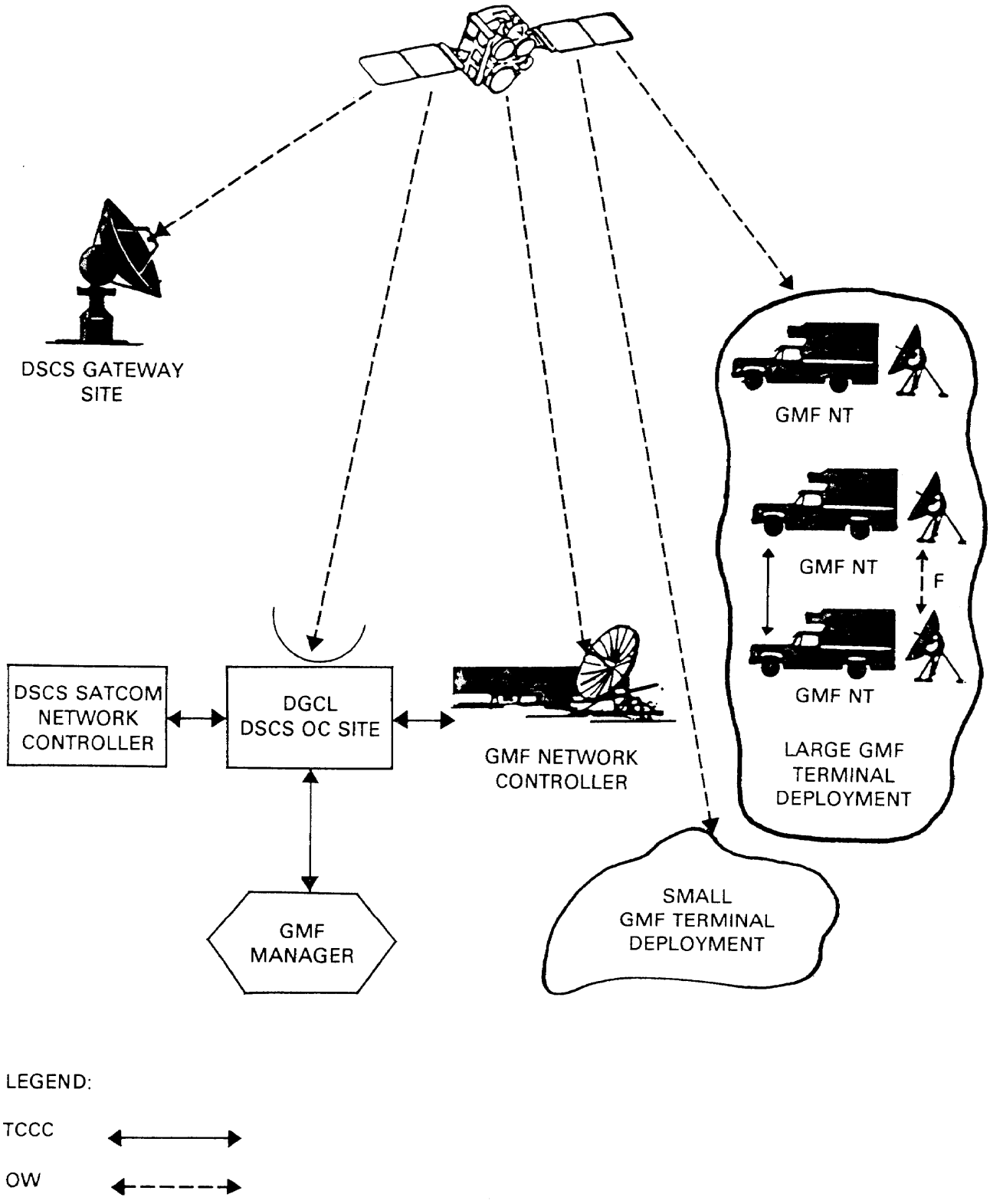

Figure 7-2. DSCS/DGCL Mission Capabilities